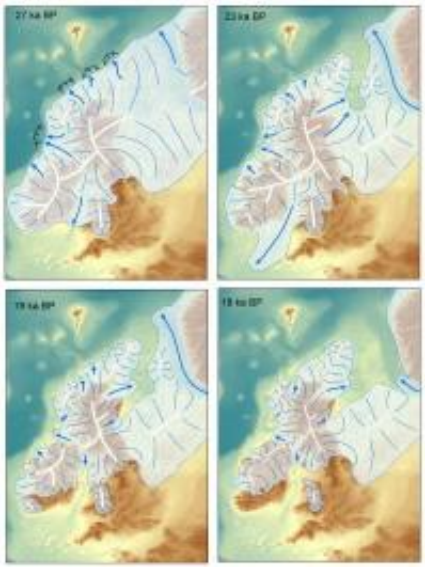
Researchers map out ice sheets shrinking during Ice Age

February 11 2011



These maps show the rate at which the ice sheet over the British Isles during the last Ice Age melted. The ka on the images is short for thousand years and BP is 'before present.' So 27 Ka BP is the map of the ice sheet at 27,000 years ago. Credit: University of Sheffield

A set of maps created by the University of Sheffield have illustrated, for the first time, how our last British ice sheet shrunk during the Ice Age.

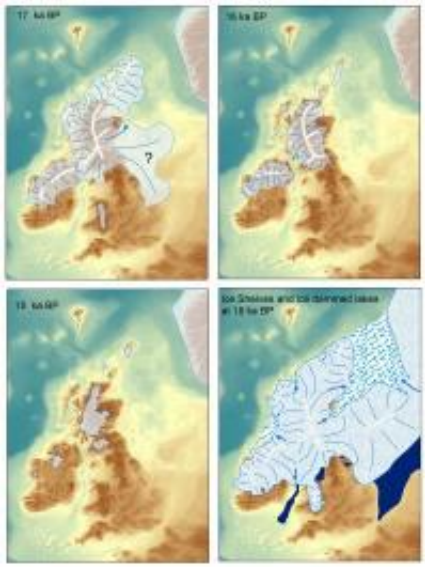
Led by Professor Chris Clark from the University's Department of Geography, a team of experts developed the maps to understand what effect the current shrinking of ice sheets in parts of the Antarctic and

Greenland will have on the speed of sea level rise.

The unique maps record the pattern and speed of shrinkage of the large ice sheet that covered the British Isles during the last Ice Age, approximately 20,000 years ago. The sheet, which subsumed most of Britain, Ireland and the North Sea, had an ice volume sufficient to raise global sea level by around 2.5 metres when it melted.

Using the maps, researchers will be able to understand the mechanisms and rate of change of ice sheet retreat, allowing them to make predictions for our polar regions, whose ice sheets appear to be melting as a result of temperature increases in the air and oceans.

The maps are based on new information on glacial landforms, such as moraines and drumlins, which were discovered using new technology such as remote sensing data that is able to image the land surface and seafloor at unprecedented resolutions. Experts combined this new information with that from fieldwork, some of it dating back to the nineteenth century, to produce the final maps of retreat.



These maps show the rate at which the ice sheet over the British Isles during the last Ice Age melted. The ka on the images is short for thousand years and BP is 'before present.' So 27 Ka BP is the map of the ice sheet at 27,000 years ago. Credit: University of Sheffield

It is also possible to use the maps to reveal exactly when land became exposed from beneath the ice and was available for colonisation and use by plants, animals and humans. This provides the opportunity for viewers to pinpoint when their town/region emerged.

Professor Chris Clark, from the University of Sheffield's Department of Geography, said: "It took us over 10 years to gather all the information in order to produce these maps, and we are delighted with the results, It is great to be able to visualise the ice sheet and notice that retreat speeds up and slows down, and it is vital of course that we learn exactly why. With such understanding we will be able to better predict ice losses in Greenland and Antarctica.

"In our next phase of work we hope to really tighten up on the timing and rates of retreat in more detail, by dropping tethered corers from a ship to extract seafloor sediments that can be radiocarbon dated."

These findings were published in *Quaternary Science Reviews.*

Provided by University of Sheffield

Citation: Researchers map out ice sheets shrinking during Ice Age (2011, February 11) retrieved 20 September 2024 from https://phys.org/news/2011-02-ice-sheets-age.html